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EXAMINER	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/706,696
Filing Date: November 12, 2003
Appellant(s): VARIN ET AL.

John E. Johnson, III
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 12-01-2008 appealing from the Office action mailed 04-03-2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4,011,766	Waugh	03-1977
4,904,232	Kitahama et al.	02-1990

4,981,462 White, Jr. et al. 01-1991

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

The grounds of rejection for claims 1-17 are set forth in the rejection mailed 04-03-2008 and are as follows:

1. Claims 1-12 and 15-17 are unpatentable over White et al. (4,981,462). in view of Kitahama et al. (4,904,232). In claims 1-3, 5 and 15, White et al. discloses a transmission belt (figs. 3 and 4) comprising a plurality of v-ribs (38) made from a f single material having flat sides faces (44) and round ridges that present a convex curvilinear profile. White et al. also discloses the tip of the rib has a radius of curvature but fails to disclose the actual range of the radius. Kitahama et al. discloses a belt having ribs (16) with tips (23) having a radius of curvature in the range of approximately 0.5 mm to 1.1 mm (col.3, lines 43-47) and the height of the rib is 2.5mm and the height of the inner portion, which is the vertical height of the curve section of the rib is approximately 0.8mm, which indicate that there vertical height of the flat surface of the rib is approximately 1.7 mm. However, since the included angle is approximately 20-80 degrees, the outside angle is approximately 50-60 degrees. Therefore, the height of the flat side is about 1.7/sin (90-1/2θ). One possible value is when θ is 80 degrees, the height is approximately 1.73 mm which is within the range of the claimed invention. Kitahama et al. disclose that the values are important in increasing the lifetime ratio of the belt (col. 5, lines 23-27). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of White et al. so that the rib

tip has a convex curvilinear radius, the height of the rib and the length of the flat side that fall within the ranges as disclosed by Kitahama et al. in order to increase the lifetime ratio of the belt. Furthermore, it would have been a matter of obvious design choice based on the size of the belt and pulley such that one of ordinary skill in the would be able to make the radius of the convex curvilinear profile to be greater than 1.1 mm and less that or equal to 1.5 mm, the length of the flat side to be between 0.7mm and 1.7 mm and the height of the rib to be between 1.8 and 2.2 mm. In addition, Kitahama et al. do not disclose the ranges as set forth in claims 6-10 and 16-17. It is well known in the art that the radius of the tip of the rib and the length of the flat side of the rib is dependent on the size of the belt and the belt and pulley. Therefore, such dimensions are subjective and relative. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the belt of White et al. so that the rib tip has a convex curvilinear radius, the height of the rib and the length of the flat side that fall within the ranges of the claimed invention, since it has been held that where the general conditions of a claim are disclose in the prior art, discovering the optimum ranges involves routing skill ion the art. *In re Aller, 105 USPQ 233.* Furthermore, it would have been a matter of obvious design choice based on the size of the belt and pulley such that one of ordinary skill in the would be able to make the radius of the convex curvilinear profile to be greater than 1.1 mm and less that or equal to 1.5 mm, the length of the flat side to be between 0.7mm and 1.7 mm and the height of the rib to be between 1.8 and 2.2 mm.

In claim 4, note the curvilinear profile is a circle (fig. 2).

In claim 11, note the curvilinear profile is tangential to the side face at the point of contact (22, 125 in fig. 2).

In claim 12, it is apparent that the belt could be K-type belt.

Claims 13 and 14 are unpatentable over White et al. in view Kitahama et al. of as applied to claim 1, above, and further in view of Waugh (4,011,766). White et al. do not disclose that the V-ribs of the V-belt are machined or molded. Waugh discloses that it is well know for the V-ribs of the V-belt to be machined or molded (col.6, lines 22-33). Therefore, it would have been obvious to one of ordinary skill in art at the time of the invention to produce the v-ribs of White et al. device by molding or machine in view of Waugh in order to manufacturing cost, reduce production time and to avoid shaving/finishing after manufacturing.

(10) Response to Argument

In respond to applicant argument that there is no motivation to combine the prior art of white et al. and Kitahama because White et al. fail to disclose the claimed ranges and Kitahama teaches away from the invention of white et al. in that Kitahama fails to teach the rib of the belt is made from a single elastomeric material but instead is made of at least two different material of different hardness. In response, it should be noted that Kitahama does not teach the mean radius of curvature of about 1.1 mm is related to the material of the rib. Note White Jr. et al. disclose the ridge (46) having a radius of approximately 0.033 inches (which is approximately 0.838 mm) (se col. 5, lines 54-60), and it is within the skill of one or ordinary skill in the art to modify the ridge of White Jr. et al. to have the ridge so that it is at least 1.1 mm. It is also well known that the

dimension of about 1.1 mm falls within the area of "approximately 0.838 mm. Kitahama also associate reduce belt cracking of the belt with the two different material of the rib, and the coefficient of friction the radii of curvature of the tip of the ridge (46) with the radii of the ridge.

Applicant contended that the Kitahama range of 1.1 mm falls within the lower end of the claimed range and that only one belt is described by Kitahama as having the claim range (see page 19, paragraph 2 of the appeal brief). In response, It should be noted that the reference does not need to have any specific and exact range for every belt of its invention but as long as the prior art can clearly show at least one invention meets limitation of the instant invention, the rejection is proper.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, one of ordinary skill in the art would be able to modify the ridges and the flat side base claimed so as to include the claimed dimensions for increasing the lifetime ratios and to increase friction.

Regarding argument to claims 2-3, applicant contended that the prior art fails to disclose the ranges of 1.05 to 1.45 or 1.3 mm. As stated above, the value of about 1.1 mm falls within the area about the claim ranges and therefore meets the claim limitation.

Regarding argument to claim 15, applicant contended that the prior art fails to teach the range of 1.15 to 1.25. In response, it should be noted that applicant's random selection of ranges clearly fails to clarify which selection is most significant to the invention and it appears that the range of 1.1 would have the same effective result as the range of 1.15 10 1.25, since these ranges are extremely close to each other. Applicant has not clearly disclose the disadvantage of 1.1mm to 1.15 -1.25 mm. Therefore, one of ordinary skill in the art at the time of the invention would fine it appropriate to make the radius at least 1.25-1.125 depending on the size of the belt.

Regarding claims 6-10 and 16-17, applicant argues that the prior art to Kitahama discloses the ranges for a specific belt dimension such as a rib height of 2.5 mm for a belt of 975 mm long, An inner portion of 0.8 mm for a belt of 975 mm long and a flat side of 1.73 mm but fails to provide any support as to why one skill in the art would pick one dimension from 900 mm and a second dimension for 975 mm. In response, these random selections of the claim dimension fails to provide any significance with respect as to the overall performance of the belt. As shown by Kitahama, the claim dimension are well known in the art for transmission belts, and irrespective of the length of the belt one of ordinary skill in the art would be able to select such dimension as Kitahama does, for any particular belt as a matter of design choice.

Regarding argument to claims 13-14, applicant contended that Waugh fails to teach, suggest or render predictable of a power transmission belt for a motor vehicle including V-ribs made of single elastomer material as disclosed by the instant invention. As well known in the art, molding and machining are common methods or techniques for producing the ridges and ribs of a belt, and Waugh clearly discloses the use of molding and machining. The molding and machining techniques is not dependent on the type of transmission belt as applicant indicates. These are the most common techniques or method for shaping belts. Therefore, it would have been obvious to one of the level of ordinary skill n the art would fined it possible to for the ridges and ribs of the belt of White Jr. et al. by molding or machining.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Marcus Charles/

Primary Examiner, Art Unit 3656

Conferees:

/Richard WL Ridley/
Supervisory Patent Examiner, Art Unit 3656

/Marc Jimenez/

TQAS TC 3600